D-21,105

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Serial No.: 09/846,233 Group Art Unit: 1724

Inventors: Bikson et al Filed: May 2, 2001

Title: HOLLOW FIBER MEMBRANE GAS SEPARATION CARTRIDGE AND GAS PURFICATION ASSEMBLY Examiner: Spitzer

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AMENDMENT AFTER FINAL REJECTION

This is in response to the office action mailed November 25, 2002. A one-month extension of time is attached hereto in duplicate.

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In the claims:

Please amend claims 1, 7 and 13-14 ad s follows:

1. (Twice amended) A hollow fiber membrane gas separation apparatus comprising (i) a housing body defined by an essentially cylindrical bowl connected in a sealed and removable manner in correspondence with its axial end portion to a lid, wherein said lid having formed therethrough a feed gas inlet port in a first end of said lid and a product outlet port in a second end of said lid and a gas flow conduit positioned coaxially to said housing body such that said inlet port and said outlet port are spaced essentially in a straight line relative to one another, and said gas flow conduit is placed in fluid communication with said feed gas inlet port or said outlet port, and wherein said bowl being provided with a waste gas exit port placed coaxially to said housing body, and (ii) a substantially cylindrical hollow fiber membrane gas separation cartridge placed coaxially in said housing body and connected in a sealed and removable manner with its first axial end to said gas flow conduit in the lid and with its second axial end to said waste gas exit port in the bowl said cartridge includes:

(a) an elongated tubular inner core member,

(b) a substantially cylindrical hollow fiber membrane bundle surrounding said inner core member constructed from hollow fiber membranes having permeate and nonpermeate sides, said bundle being characterized as having a substantially countercurrent flow arrangement between the gas flow on said permeate side and the gas flow on said nonpermeate side,

(c) two tubular tubesheets encapsulating both ends of said hollow fiber bundle in a fluid-tight arrangement with one end of the inner core member opening out of one of said tubesheets to permit flow of gas in and out of said inner core member and wherein at least one of said tubesheets is severed to permit unobstructed flow of gas in and out of the hollow fiber lumens,

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